

Prairie Dog Facts: Pre/Post Test

1. What are prairie dogs?
☐ colonial squirrel-like animals
☐ colonial dog-like animals
☐ wild canines (dogs) living on the prairies
☐ colonial dog-like animals and wild canines living on the prairies
2. What part of North America had the largest population of prairie dogs?
☐ West Texas
☐ Rocky Mountains
☐ Great Plains
☐ Kansas
3. How many prairie dogs were estimated to have been living in North America in the 1900s?
☐ 6 million
☐ 5 billion
☐ 250,000
☐ 600 million
4. How many prairie dog species are there?
☐ 1
☐ 5
☐ 80
☐ 60,000
5. How many prairie dog species live in New Mexico?
☐ 1
☐ 2
☐ 3
☐ 5
6. What two species of prairie dogs are found in New Mexico?
☐ Carson's and Gunnison's
☐ Black-tailed and White-tailed
☐ Black-tailed and Mexican
☐ Gunnison's and Black-tailed

7. How long has the black-tailed prairie dog inhabited North America?
☐ since Pleistocene time (about 2 million years)
☐ 10,000 years
☐ about 1500 years
☐ 60 million years
8. How much has the black-tailed prairie dog population declined since the 1900s?
☐ 25%
☐ 67%
☐ 10%
☐ 98%
9. What are the causes for this population decline?
☐ loss of habitat
☐ disease
☐ extermination
☐ all of the above
10. An example of how the decline of one species can cause the near extinction of another is the symbiotic relationship that exists between the prairie dog and the _____.
☐ spotted owl
☐ black-footed ferret
☐ horned lizard
☐ red fox
11. When was the last time prairie dogs were seen living in Guadalupe Mountains National Park and what happened to them?
☐ yesterday - nothing
☐ 100 years ago - died of old age
☐ 1940s - eaten by hawks
☐ 1960s - poisoned
12. Why is Linnaeus important to the science of biology?
☐ developed binomial nomenclature system for naming organisms
☐ developed classification system based on common characteristics shared by organisms
☐ created the branch of biology called taxonomy
☐ all of the above are true
13. Which is an example of the correct way to write a scientific name?
☐ Cynomys ludovicianus
☐ cynomys Ludovicianus
☐ Cynomys ludovicianus
☐ Cynomys ludovicianus or *Cynomys ludovicianus*

14. What is the scientific name of the black-tailed prairie dog?
☐ *Cynomys ludovicianus*
☐ *Cynomys leucurus*
☐ *Mustela nigripes*
☐ *Yersinia pestis*
15. Prairie dog colonies are composed of family units called _____.
☐ herds
☐ litters
☐ prides
☐ coteries
16. Prairie dogs have an annual reproductive cycle that starts each January.
☐ True
☐ False
17. Young male prairie dog offspring within a family unit usually _____.
☐ leave in the spring before they become sexually mature (disperse)
☐ stay with the family unit and compete with older males for mates
☐ capture females from nearby colonies and bring them back home
☐ stay with the family unit and compete with older males for mates, capturing females from nearby colonies and bringing them back home
18. Black-tailed prairie dogs are diurnal and herbivorous which means _____.
☐ they come out at night to eat insects
☐ they come out at night to eat plants
☐ they come out mornings and evenings to eat mice and small birds
☐ they are active during the daytime and eat plants
19. Population counts should be done in the middle of the day when most of the prairie dogs are active.
☐ True
☐ False
20. Bubonic plague in humans and sylvatic plague in prairie dogs is caused by the same bacterial organism.
☐ True
☐ False
21. Rodents, such as the prairie dog, can be a source of bubonic plague.
☐ True
☐ False

22. How is bubonic plague transmitted to humans?
- ☐ prairie dog bites the human
 - ☐ human inhales dust contaminated by sick prairie dog
 - ☐ bitten by fleas carrying disease or by contact with plague infected tissue
 - ☐ all of the above are true
23. Proper clothing, use of flea repellent and careful handling of prairie dogs can minimize the chances of a person being infected by plague.
- ☐ True
 - ☐ False
24. Some diseases that are transmitted by ticks are _____.
- ☐ Rocky Mountain spotted fever
 - ☐ Lyme disease
 - ☐ tularemia (rabbit fever)
 - ☐ all of the above
25. Hanta virus and rabies are other diseases that rodents can transmit to humans.
- ☐ True
 - ☐ False

Prairie Dog Facts: Pre/Post Test Key

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Prairie Dog Facts

Notes

Prairie dogs are large burrowing squirrels, 312 to 415 mm long, weighing 680 to 1500 grams, that live in colonies called prairie dog towns. Settlers moving west in the 1800s called them prairie dogs because of where they lived and because of the alarm “bark” they used to alert the colony. The Plains Indians called the prairie dog “Whishtonwish” and used it as a source of food. The prairie dog came to the attention of American biologists as a result of the Lewis and Clark expedition from 1804 to 1806. Prairie dogs prefer to live in areas where short-grass and mixed grass-prairies are found. It is estimated that five billion prairie dogs occupied the plains of North America in the 1900s.

There are five species of prairie dogs in North America.

1. Black-tailed (*Cynomys ludovicianus*)
2. Gunnison’s (*Cynomys gunnisoni*)
3. Utah (*Cynomys parvidens*)
4. White-tailed (*Cynomys leucurus*)
5. Mexican (*Cynomys mexicanus*)

Of the five species, two live in New Mexico, the black-tailed and Gunnison’s prairie dogs.

The black-tailed prairie dog (*Cynomys ludovicianus*) and its two subspecies *C. l. arizonenses* and *C. l. ludovicianus* live in New Mexico and west Texas. Since the Pleistocene Epoch the black-tailed prairie dog has inhabited the region between southern Canada and northern Mexico. This species prefers short-grass and mixed-grass prairie, but they also occupy shinnery oak-grassland, tall-grass prairie and mesquite-grassland habitats.

Since the 1900s, black-tailed prairie dog populations have declined by 98%. Eradication programs, habitat loss due to agricultural and urban uses, and disease are the primary causes. As a result, the associated biota dependent on sympatric relationships with prairie dogs has been negatively impacted. For example, the black-footed ferret, which depends on the prairie dog for its main source of food, is near extinction.

Black-tailed prairie dogs, once a common part of the Guadalupe Mountains National Park’s ecosystem, were eradicated by poison. They were last seen in the park in the mid-1960s. Five areas in the park are known to have been inhabited by prairie dogs. The park has recently initiated a prairie dog reintroduction effort.

Classification

In the 1700s Carolus Linnaeus, a Swedish botanist, developed the system for naming plants and animals that scientists use today. His method of naming organisms is called binomial nomenclature - each organism has a unique two-part name based on its genus and species. For example, the black-tailed prairie dog's scientific name is *Cynomys ludovicianus* and the white-tailed prairie dog's scientific name is *Cynomys leucurus*. Notice that the first part of each scientific name is capitalized, representing the genus, and that the second part of each name is not capitalized, which is the species name. Also the name is written in *italics* or underlined.

Linnaeus also grouped organisms based on important characteristics that they shared. The groups to which he assigned organisms are called taxa - hence the science of naming organisms called taxonomy. Here is an example of how his classification system is used to classify the black-tailed prairie dog:

Kingdom - Animalia

Phylum - Chordata

Class - Mammalia

Order - Rodentia

Family - Sciuridae

Genus - *Cynomys*

Species - *ludovicianus*

Black-Tailed Prairie Dog Life Cycle

A prairie dog town or colony is made of family units called coteries. A coterie consists of one or two territorial adult males, more than two years old, three to four adult females (mothers, sisters, aunts) and several yearling and juvenile offspring. Typical coterie have six to nine family members. Burrow systems and food are communal property within the coterie.

Black-tailed prairie dogs breed once per year, starting in January. Gestation period is 34 to 35 days. Litter size is from one to six pups. Pups remain underground for six weeks and emerge in May or June. The pups are weaned when they are about seven weeks old. By the end of fall, the pups are nearly full-grown. It takes two years for the males to reach sexual maturity, but the young females can breed as yearlings. The young females stay with the coterie and the young males leave in the spring (disperse in May or June) before their first breeding season.

Prairie dogs are curious animals that are very entertaining to observe. Since prairie dogs are diurnal and herbivorous, they usually can be observed feeding early and late in the day. Optimum times for observation are up to two and one half hours after sunrise and two hours before sunset. Population counts should be done when the maximum number of prairie dogs are above ground, which is one and one half to two and one half hours before sunset in late May when the juveniles have emerged.

Disease Transmission – Prairie Dogs and Other Animals

Prairie dogs can carry disease organisms that are harmful to humans and to other prairie dogs. The most common disease affecting both humans and prairie dogs is plague, which is caused by the bacteria *Yersinia pestis*. In humans, the disease is called bubonic plague, and in Medieval times, it was called the Black Death. In prairie dogs, the disease is called sylvatic plague.

Plague is transmitted to humans by fleas that have been infected by rodents that carry the disease. Humans can also get plague by being exposed to infected tissue. In prairie dogs, it is thought that the disease is introduced by another mammalian host via fleas that infect the colony.

Precautions that need to be taken by people handling prairie dogs are to wear clothing that covers most of the body (long-sleeved shirt, long pants, boots, thick leather gloves) and to use flea and tick repellent. One also should have a valid tetanus vaccination.

One also runs the risk of getting tick-borne diseases, such as Rocky Mountain spotted fever (tick-borne typhus fever) and Lyme disease, from many mammals including the prairie dog. Tularemia (rabbit or deerfly fever) also can be transmitted by ticks, as well as by deerflies and handling infected animals such as rabbits, muskrats and beavers.

Hanta virus (HPS - Hantavirus Pulmonary Syndrome) a severe, potentially lethal disease, has the potential to be carried by all rodents including the prairie dog. One may become infected by breathing or ingesting the virus from areas where contaminated rodent urine, droppings and saliva are found. Being bitten by an infected rodent is also a source of infection.

Do not overlook the possibility of rabies. Any mammal can be infected. Avoid any animal exhibiting abnormal (strange) behavior!

Prairie Dog Facts: Questions Related to Presentations
Work Sheet

1. In general terms, what are prairie dogs?
2. Why are they called prairie dogs?
3. Where do they prefer to live, and how many are estimated to have been living in North America in the 1900s?
4. How many species are there?
5. How many species live in New Mexico and what are they?
6. What two subspecies of black-tailed prairie dogs are found in our area?
7. How long has the prairie dog inhabited North America?
8. How much (percentage) has the black-tailed prairie dog population declined since the 1900s?
9. What are the causes for this population decline?
10. Define the following terms: biota, symbiotic (symbiosis) and ecosystem.
11. When was the last time prairie dogs were seen living in Guadalupe Mountains National Park? What happened to them?
12. Why is Linnaeus important to the science of biology?
13. How do you write a scientific name? Give an example.

14. What is the scientific name of the black-tailed prairie dog?
15. Define the word "taxonomy".
16. Prairie dog family units are called _____.
17. What is the family structure (numbers, sexes, ages) of a typical coterie?
18. How often do black-tailed prairie dogs breed?
19. How many pups are usually born?
20. When should you do population counts?
21. What are the names for human plague and for prairie dog plague? What bacteria is the cause?
22. How is bubonic plague transmitted to humans?
23. What can a person do to protect himself/herself from plague?
24. What are some diseases transmitted by ticks?
25. What are other diseases that one can contract via animal contact?